

REMARKS

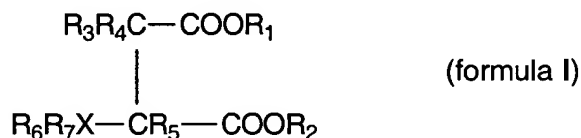
The Examiner is respectfully requested to reconsider the application in view of the following remarks.

35 U.S.C. § 103

Claims 1 and 4-6 are rejected under 35 U.S.C. § 103(a) as being obvious over United States Patent No. 4,462,918 (Matthews et al.) in view of European Patent Application No. 0,434,464 (Waters et al.) and United States Patent No. 4,627,928 (Kahn). The rejection is respectfully traversed for the following reasons.

The invention is a hydraulic fluid comprising a lubricant base oil in combination with

- (a) from 0.001 to at most 1 %wt of magnesium salicylate,
- (b) from 0.01 to at most 1%wt of zinc dithiophosphate; and,
- (c) from 0.001 to 5 %wt of a compound according to the following formula I



in which R_1 and R_2 are each an alkyl of 3 to 6 carbon atoms; R_3 , R_4 and R_5 are each hydrogen; X is N and R_6 and R_7 are each an alkyl of 15 to 20 carbon atoms, or an acyl group derived from a saturated or unsaturated carboxylic acid containing 4 to 10 carbon atoms, at least one of R_6 and R_7 being an acyl group. Applicants have found that the specific combination of components (a), (b), and (c) in certain amount provide improved performance at low load compared with a combination containing calcium salicylate and also provides greater thermal stability and less sludge and deposits formed. As can be seen at Table 1, the comparative composition containing calcium salicylate (Composition 2) has significantly more ring weight loss and total weight loss than the composition as claimed in the present application containing magnesium salicylate (Composition 1). Further, applicants' claimed formulations contain ash producing compounds such as magnesium salicylate and zinc dithiophosphate. It is unexpected to have a hydraulic fluid comprising low amounts of zinc dithiophosphate ("ZnDTP") anti-wear agent to have good protection against wear. As discussed in the Declaration of Dr. Richard Dixon of March 27, 2004, historically zinc dithiophosphate has been used in large quantity to improve wear resistance.

The Matthews patent deals with the combination of ZnDTP and acidic antirust agent as a means to reduce wear. It makes no mention of the use of salicylates. Matthews makes reference to IP 281 wear test which is not a low load test.

Dr. Dixon states (page 3) that the wear test in the Matthews patent is run to standard length of 250 hours. Applicants' formulation delivers extended low wear over long period of low load (wear at idle condition) which is unexpected to a skilled person in Dr. Dixon's opinion. As stated by Dr. Dixon (page 3), applicants' claimed formulation that shows constant wear over 1000 hours and at low load condition is unexpected for a person skilled in the art. The key difference with Matthews teaching is that the Application utilizes Magnesium salicylate to deliver the extended low wear over long period of low load.

The Examiner states that "EPA '464 teach that when used in an acidic environment, it can be desirable to incorporate , inter alia, over based alkylsalicylate (page 3, lines 49-52)". It should be noted that mineral oil hydraulic fluids are not considered to be used in acidic medium, they are of low acidity and the overbasing of alkyl salicylates, traditionally the rationale for the use of these products in engine oils, is not the rationale for their use in hydraulics. Thus, Matthews in combination with Waters and Kerns does not teach or suggest applicants claimed invention.

The Waters patent aims at the formulation of ashless (metal-free) hydraulic fluids. As stated by Dr. Richard Dixon (page 4), in an ashless formulation, by definition, there are no metals to leave ash after burning and a person skilled in the art in his opinion will not look for a solution of an ash-containing formulation from an ashless formulation. According to Dr. Dixon there are different industry requirements and chemistry involved between ashless and ash-containing formulation.

Clearly Waters teach a zinc-free (ZnDTP-free) and ashless formulation. (page 2, lines 7-9 and line 18 and line 39) By contrast Applicants formulation is an ash-containing formulation that contains ash producing compounds such as magnesium salicylate and zinc dithiophosphate. According to Dr. Dixon (page 4), a skilled person would readily understand that a ashless hydraulic fluids formulations such as Waters are significantly different from the applicants formulation containing ash producing metals.

The Karn patent relates to basic magnesium salts of substituted aromatic hydroxyl carboxylic acids or the derivatives thereof and to a process for preparing such salts. (see abstract) The Examiner cites column 17, lines 41-47 disclosing use in hydraulic oils but Karn does not teach or suggest the area of application that may be improved in a lubricating oil and does not suggest or teach applicants composition in combination with Matthew and Waters. The reference does not mention wear performance improvements or antiwear agents but is directed to use as dispersants. Karn patent states at column 2, lines 22-26:

Based on all of the foregoing, it is submitted that the instantly claimed invention as a whole would not have been obvious to a skilled person over Matthews in view of Waters

and Kahn. Applicants have found that a hydraulic fluid comprising lubricating base oil in combination with specific components (a), (b), and (c) in certain amount provide good wear performance at low load and also provides greater thermal stability and less sludge and deposits formed. In Dr. Dixon's opinion (page 4), a skilled person would understand the significance of a low ZnDTP formulation having good extended low wear over long period of low load as can be seen at Table 1 composition 1 as claimed in the present application. Mineral oil hydraulic fluids are not considered to be used in acidic medium, they are of low acidity and the overbasing of alkyl salicylates, traditionally the rationale for the use of these products in engine oils, is not the rationale for their use in hydraulics and thus, applicants submit that the Examiner's obviousness rejection is an improper reconstruction of the invention based on impermissible hindsight gained from the knowledge gleaned from the Applicants' disclosure.

Accordingly, Applicants respectfully request withdrawal of the 103 rejection.

Claims 1 and 4-6 are rejected under 35 U.S.C. § 103(a) as being obvious over United States Patent No. 6,114,288 (Fujitsu et al.) in view of United States Patent No. 4,462,918 (Matthews et al.) The rejection is respectfully traversed for the following reasons.

The Fujitsu patent deals with lubricating oil for internal combustion engines as stated in the title. According to Dr. Dixon (page 5), a skilled person would understand that it is not relevant to hydraulics and such teachings can not be translated to hydraulic fluids. According to Dr. Dixon, a skilled person would understand that this has nothing to do with hydraulic system wear where scuffing is not a common issue. In addition, Fujitsu uses larger amounts of alkyl salicylates.

As can be seen at Table 1, the comparative composition containing calcium salicylate (Composition 2) has significantly more ring weight loss and total weight loss than the composition as claimed in the present application containing magnesium salicylate (Composition 1). The chemistry is clearly complex in such hydraulic fluids as can be seen by the complex and unpredictable results between composition with similar compounds. Clearly, a person skilled in the art can not expect success in achieving applicants results in a hydraulic fluid from a reference for an internal combustion engine, particularly in view of lack of showing of difference between calcium salicylate and magnesium salicylate.

The Matthews patent is discussed above. Matthews does not teach or suggest use of salicylates so clearly does not teach the difference between calcium salicylate and magnesium salicylate that is also lacking in Fujitsu.

Based on all of the foregoing, it is submitted that the instantly claimed invention would not have been obvious to a skilled person obvious over Fujitsu in view of Matthews.

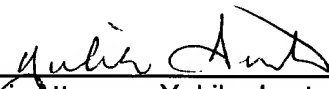
Again, applicants submit that the Examiner's obviousness rejection is an improper reconstruction of the invention based on impermissible hindsight gained from the knowledge gleaned from the Applicants' disclosure.

Accordingly, Applicants respectfully request withdrawal of the 103 rejection.

The Examiner is respectfully requested to reexamine the claims and pass the case to issue. If it would be considered helpful in resolving any issues in the case, the Examiner is encouraged to contact the undersigned at the number below.

Respectfully submitted,

ANDREW JOHN HOLMES and
CAMERON WILLIAM WATSON

By 

Their Attorney, Yukiko Iwata
Registration No. 35,748
(713) 241-5593

P.O. Box 2463
Houston, TX 77252-2463